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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,338	09/19/2003	Xiaoju Wu	TI-33005.1	8392

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EXAMINER

MENZ, DOUGLAS M

ART UNIT PAPER NUMBER

2824

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/666,338

Applicant(s)

WU, XIAOJU

Examiner

Douglas M Menz

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Search History.

## **DETAILED ACTION**

### ***Specification***

The abstract of the disclosure is objected to because of the use of legal phraseology. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12-13, 16-17 and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Malhi et al. (US 5717241).

Regarding claim 12, Malhi discloses a semiconductor device, comprising:

A buried layer (36) of a semiconductor substrate (32) (Figs. 2 and 12);

An active region (38) adjacent at least a portion of the buried layer (Figs. 2,8,9,12);

An isolation structure (39) adjacent at least a portion of the active region (Figs. 2,4,8,9,12);

A gate oxide (50) adjacent at least a portion of the active region (Figs. 2,6-9,12);

A polysilicon definition structure (52) adjacent at least a portion of the gate oxide, wherein the polysilicon definition structure at least substantially surrounds and defines an emitter contact region (44) (Figs. 2,3,6-9,12); and

An implant region (52) of the emitter contact region, wherein the implant region is self-aligned during formation (Fig. 7 and Col. 8, lines: 40-47) .

Regarding claim 13, Malhi further discloses further comprising an implant region of a base contact region (54) , wherein the base contact region is proximate an outer edge of the polysilicon definition structure (Figs. 2,3,7-9,12).

Regarding claim 16, Malhi further discloses wherein the isolation structure (39) comprises a local oxidation on silicon (LOCOS) isolation structure (Col. 8, lines: 13-18).

Regarding claim 17, Malhi further discloses wherein the isolation structure comprises a shallow trench isolation (STI) structure (Col. 8, lines: 13-18).

Regarding claim 19, Malhi further discloses further comprising an emitter contact (45) at the emitter contact region (44) (Figs. 2,3,12 and Col. 7, lines: 25-30).

Regarding claim 20, Malhi further discloses further comprising one or more spacer structures (56) adjacent the polysilicon definition structure (52) (Figs. 2,8,9,12).

Regarding claim 21, Malhi further discloses wherein the spacer structures (56) comprise a nitride (Col. 8, lines: 45-55).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malhi et al. (US 5717241).

Malhi discloses the structure of claim 12 as mentioned above, however, Malhi does not explicitly disclose various feature sizes of between 0.4 – 3.5 microns. It would have been obvious to one of ordinary skill in the art at the time the invention was made to realize such feature sizes for Malhi's structure as these were commonly practiced in

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the art at the time of the invention. Furthermore, Malhi discloses that one purpose of the structure is to reduce the effective base width of the lateral bipolar transistor (Wb, Fig. 2 and Col. 7, lines: 15-20). Such teachings further support obviousness of the feature sizes of the polysilicon definition structure of approximately 0.4 to 0.6 microns.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas M Menz whose telephone number is 571-272-1877. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**RICHARD ELMS**  
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